10 CSR 10-2.210 Control of Emissions From Solvent Metal Cleaning

(1) Application.

(A) This rule shall apply throughout Clay, Jackson and Platte Counties.

(B) This rule shall apply to all installations which emit volatile organic compounds (VOC) from solvent metal cleaning or degreasing operations.

(C) This rule applies to all processes which use cold cleaners, open-top vapor degreasers or conveyorized degreasers, using nonaqueous solvents to clean and remove soils from metal surfaces.

(2) Definitions.

(A) Airless cleaning system--A degreasing machine that is automatically operated and seals at a differential pressure of 25 torr (0.475 pounds per square inch (psi)) or less, prior to the introduction of solvent vapor into the cleaning chamber and maintains differential pressure under vacuum during all cleaning and drying cycles.

(B) Air-tight cleaning system--A degreasing machine that is automatically operated and seals at a differential pressure no greater than 0.5 pounds per square inch gauge (psig) during all cleaning and drying cycles.

(C) Aqueous solvent--Any solvent consisting of sixty percent (60%) or more by volume water with a flashpoint greater than ninety-three degrees Celsius (93/C) and is miscible with water.

(D) Electronic components--All portions of an electronic assembly, including, but not limited to, circuit board assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, and associated electronic component manufacturing equipment such as screens and filters.

(E) Freeboard area--The air space in a batch-load cold cleaner that extends from the liquid surface to the top of the tank.

(F) Freeboard height--

1. The distance from the top of the solvent to the top of the tank for batch-loaded cold cleaners;

2. The distance from the air-vapor interface to the top of the tank for open-top vapor degreasers; or

3. The distance from either the air-solvent or air-vapor interface to the top of the tank for conveyorized degreasers.

(G) Freeboard ratio--The freeboard height divided by the smaller of either the inside length or inside width of the degreaser.

(H) Medical device--An instrument, apparatus, implement, machine, contrivance, implant, *in vitro* reagent or other similar article, including any component or accessory that meets one (1) of the following conditions:

1. It is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease;

2. It is intended to affect the structure or any function of the body; or

3. It is defined in the *National Formulary* or the *United States Pharmacopoeia*, or any supplement to them.

(I) Definitions of certain terms specified in this rule, other than those specified in this rule section, may be found in 10 CSR 10-6.020.

(3) General Provisions.

(A) No person shall cause or allow solvent metal cleaning or degreasing operation--

1. Without adhering to operating procedures as contained in this rule and to recommendations by the equipment manufacturer;

2. Without the minimum operator and supervisor training as specified in this rule; and

3. Unless the equipment conforms to the specifications listed in this rule.

(B) Equipment Specifications.

1. Cold cleaners.

A. After August 30, 2002--

(I) No owner or operator shall allow the operation of any cold cleaner using a cold cleaning solvent with a vapor pressure greater than 2.0 millimeters of Mercury (mmHg) (0.038 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)) unless the cold cleaner is used for carburetor cleaning;

(II) No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent with a vapor pressure greater than 2.0 mmHg (0.038 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahren-heit (68/F)) for use within Clay, Jackson and Platte Counties unless the cold cleaning solvent is used for carburetor cleaning;

(III) No owner or operator shall allow the operation of any cold cleaner using a cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 7.0 mmHg (0.133 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)); and

(IV) No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 7.0 mmHg (0.133 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)) for use within Clay, Jackson and Platte Counties.

B. After August 30, 2003--

(I) No owner or operator shall operate or allow the operation of any cold cleaner using a cold cleaning

solvent with a vapor pressure greater than 1.0 mmHg (0.019 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)) unless the cold cleaner is used for carburetor cleaning;

(II) No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent with a vapor pressure greater than 1.0 mmHg (0.019 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)) for use within Clay, Jackson and Platte Counties unless the cold cleaning solvent is used for carburetor cleaning;

(III) No owner or operator shall allow the operation of any cold cleaner using a cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 5.0 mmHg (0.095 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)); and

(IV) No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 5.0 mmHg (0.095 psi) at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)) for use within Clay, Jackson and Platte Counties.

C. Exemptions.

(I) Sales of cold cleaning solvents in quantities of five (5) gallons or less shall be exempt from the requirements of parts (3)(B)1.A.(II), (3)(B)1.A.(IV), (3)(B)1.B.(II) and (3)(B)1.B.(IV) of this rule.

(II) The cleaning of electronic components shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.

(III) Solvent cleaning operations which meet the emission control requirements of 10 CSR 10-2.230, 10 CSR 10-2.290 and 10 CSR 10-2.340 shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.

(IV) Cold cleaners using aqueous solvents shall be exempt from the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III) of this rule.

(V) Cold cleaners using solvents regulated under any federal National Emission Standard for Hazardous Air Pollutants shall be exempt from the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III) of this rule.

(VI) Any cold cleaner with a liquid surface area of one (1) square foot or less or a maximum capacity of one (1) gallon or less shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.

(VII) The cleaning of medical and optical devices shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.

(VIII) Air-tight or airless cleaning systems shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule if the following requirements are met.

(a) The equipment is operated in accordance with the manufacturer's specifications and operated with a door or other pressure sealing apparatus that is in place during all cleaning and drying cycles.

(b) All waste solvents are stored in properly identified and sealed containers, and managed in compliance with the Missouri Hazardous Waste Management Commission rules codified at 10 CSR 25, as applicable. All associated pressure relief devices shall not allow liquid solvents to drain out.

(c) Spills during solvent transfer shall be wiped up immediately or managed in compliance with the Missouri Hazardous Waste Commission rules codified at 10 CSR 25, as applicable, and the used wipe rags shall be stored in closed containers.

(d) A differential pressure gauge shall be installed to indicate the sealed chamber pressure.

(IX) Janitorial and institutional cleaning shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.

(X) Paint spray gun and nozzle cleaning machines with the exception of remote open top spray gun cleaning machines shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule. Paint spray guns and nozzles only may be cleaned in solvent-based materials capable of stripping hardened paint, provided the solvent reservoir (not to exceed five (5) gallons in size) is kept tightly covered at all times except when being accessed. All remote paint spray gun cleaning machines shall be operated within the manufacturers' specifications. All remote closed top spray gun cleaning machines shall not be operated unless the cover is closed and shall be closed or covered when not in use.

D. An owner or operator of a cold cleaner may use an alternate method for reducing cold cleaning emissions if the owner or operator shows the level of emission control is equivalent to or greater than the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III) of this rule. This alternate method must be approved by the director.

E. Each cold cleaner shall have a cover which will prevent the escape of solvent vapors from the solvent bath while in the closed position or an enclosed reservoir which will limit the escape of solvent vapors from the solvent bath whenever parts are not being processed in the cleaner.

F. When one (1) or more of the following conditions exist, the design of the cover shall be such that it can be easily operated with one (1) hand such that minimal disturbing of the solvent vapors in the tank occurs. (For covers larger than ten (10) square feet, this shall be accomplished by either mechanical assistance such as spring loading or counterweighing or by power systems):

(I) The solvent volatility is greater than 0.3 psi measured at one hundred degrees Fahrenheit (100/F), such as in mineral spirits;

(II) The solvent is agitated; or

(III) The solvent is heated.

G. Each cold cleaner shall have a drainage facility which will be internal so that parts are enclosed under the cover while draining.

H. If an internal drainage facility cannot fit into the cleaning system and the solvent volatility is less than 0.6 psi measured at one hundred degrees Fahrenheit (100/F), then the cold cleaner shall have an external drainage facility which provides for the solvent to drain back into the solvent bath.

I. Solvent sprays, if used, shall be a solid fluid stream (not a fine, atomized or shower-type spray) and at a pressure which does not cause splashing above or beyond the freeboard.

J. A permanent conspicuous label summarizing the operating procedures shall be affixed to the equipment.

K. Any cold cleaner which uses a solvent that has a solvent volatility greater than 0.6 psi measured at one hundred degrees Fahrenheit (100/F) or heated above one hundred twenty degrees Fahrenheit (120/F) must use one (1) of the following control devices:

(I) A freeboard ratio of at least 0.75;

(II) Water cover (solvent must be insoluble in and heavier than water); or

(III) Other control systems with a mass balance demonstrated overall VOC emissions reduction efficiency greater than or equal to sixty-five percent (65%). These control systems must receive approval from the director prior to their use.

2. Open-top vapor degreasers.

A. Each open-top vapor degreaser shall have a cover which will prevent the escape of solvent vapors from the

degreaser while in the closed position and shall be designed to open and close easily with one (1) hand such that minimal disturbing of the solvent vapors in the tank occurs. For covers larger than ten (10) square feet, easy cover use shall be accomplished by either mechanical assistance, such as spring loading or counterweighing or by power systems.

B. Each open-top vapor degreaser shall be equipped with a vapor level safety thermostat with a manual reset which shuts off the heating source when the vapor level rises above the cooling or condensing coil, or an equivalent safety device approved by the director.

C. Each open-top vapor degreaser with an air/vapor interface over ten and three-fourths (10 3/4) square feet shall be equipped with at least one (1) of the following control devices:

(I) A freeboard ratio of at least 0.75;

(II) A refrigerated chiller;

(III) An enclosed design (the cover or door opens only when the dry part actually is entering or exiting the degreaser);

(IV) A carbon adsorption system with ventilation of at least fifty (50) cubic feet per minute per square foot of air vapor area when the cover is open and exhausting less than twenty-five parts per million (25 ppm) of solvent by volume averaged over one (1) complete adsorption cycle as measured using the reference method specified at 10 CSR 10-6.030(14)(A); or

(V) A control system with a mass balance demonstrated overall VOC emissions reduction efficiency greater than or equal to sixty-five percent (65%) and prior approval by the director.

D. A permanent conspicuous label summarizing the operating procedures shall be affixed to the equipment.

3. Conveyorized degreasers.

A. Each conveyorized degreaser shall have a drying tunnel or rotating (tumbling) basket or other means demonstrated to have equal to or better control which shall be used to prevent cleaned parts from carrying out solvent liquid or vapor.

B. Each conveyorized degreaser shall have the following safety switches or equivalent safety devices approved by the director which operate if the machine malfunctions:

(I) A vapor level safety thermostat with manual reset which shuts off the heating source when the vapor level rises just above the cooling or condensing coil; and

(II) A spray safety switch, which shuts off the spray pump if the vapor level in the spray chamber drops four inches (4"), for conveyorized degreasers utilizing a spray chamber.

C. Entrances and exits shall silhouette workloads so that the average clearance between parts and the edge of the degreaser opening is less than four inches (4") or less than ten percent (10%) of the width of the opening.

D. Covers shall be provided for closing off the entrance and exit during hours when the degreaser is not being used.

E. A permanent, conspicuous label summarizing the operating procedures shall be affixed to the equipment.

F. If the air/vapor interface is larger than twenty-one and one-half (21 1/2) square feet, one (1) major control device shall be required. This device shall be one (1) of the following:

(I) A refrigerated chiller;

(II) Carbon adsorption system with ventilation of at least fifty (50) cubic feet per minute per square foot of the total entrance and exit areas (when downtime covers are open) and exhausting less than twenty-five (25) ppm

of solvent by volume averaged over one (1) complete adsorption cycle as measured using the reference method specified at 10 CSR 10-6.030(14)(A); or

(III) A control system with a mass balance demonstrated overall VOC emissions reduction efficiency greater than or equal to sixty-five percent (65%) and prior approval by the director.

(C) Operating Procedures.

1. Cold cleaners.

A. Cold cleaner covers shall be closed whenever parts are not being handled in the cleaners or the solvent must drain into an enclosed reservoir.

B. Cleaned parts shall be drained in the freeboard area for at least fifteen (15) seconds or until dripping ceases, whichever is longer.

C. Whenever a cold cleaner fails to perform within the operating parameters established for it by this rule, the unit shall be shut down immediately and shall remain shut down until trained service personnel are able to restore operation within the established parameters.

D. Solvent leaks shall be repaired immediately or the degreaser shall be shut down until the leaks are repaired.

E. Any waste material removed from a cold cleaner shall be disposed of by one (1) of the following methods and in accordance with the Missouri Hazardous Waste Management Commission rules codified at 10 CSR 10-25, as applicable:

(I) Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or

(II) Stored in closed containers for transfer to—

(a) A contract reclamation service; or

(b) A disposal facility approved by the director.

F. Waste solvent shall be stored in covered containers only.

2. Open-top vapor degreasers.

A. The cover shall be kept closed at all times except when processing workloads through the degreaser.

B. Solvent carry-out shall be minimized in the following ways:

(I) Parts shall be racked, if practical, to allow full drainage;

(II) Parts shall be moved in and out of the degreaser at less than eleven feet (11') per minute;

(III) Workload shall remain in the vapor zone at least thirty (30) seconds or until condensation ceases;

(IV) Pools of solvent shall be removed from cleaned parts before removing parts from the degreaser freeboard area; and

(V) Cleaned parts shall be allowed to dry within the degreaser freeboard area for at least fifteen (15) seconds or until visually dry, whichever is longer.

C. Porous or absorbent materials such as cloth, leather, wood or rope shall not be degreased.

D. If workloads occupy more than half of the degreaser’s open-top area, rate of entry and removal shall not exceed five feet (5') per minute.

E. Spray shall never extend above vapor level.

F. Whenever an open-top vapor degreaser fails to perform within the operating parameters established for it by this rule, the unit shall be shut down until trained service

personnel are able to restore operation within the established parameters.

G. Solvent leaks shall be repaired immediately or the degreaser shall be shut down until the leaks are repaired.

H. Ventilation exhaust shall not exceed sixty-five (65) cubic feet per minute per square foot of degreaser open area unless proof is submitted that it is necessary to meet Occupational Safety and Health Administration (OSHA) requirements. Fans shall not be used near the degreaser opening.

I. Water shall not be visually detectable in solvent exiting the water separator.

J. Any waste material removed from an open-top vapor degreaser shall be disposed of by one (1) of the following methods or equivalent and in accordance with the Missouri Hazardous Waste Management Commission rules codified at 10 CSR 10-25, as applicable:

(I) Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or

(II) Stored in closed containers for transfer to—

(a) A contract reclamation service; or

(b) A disposal facility approved by the director.

K. Waste solvent shall be stored in closed containers only.

3. Conveyorized degreasers.

A. Ventilation exhaust shall not exceed sixty-five (65) cubic feet per minute per square foot of degreaser opening unless proof is submitted that it is necessary to meet OSHA requirements. Fans shall not be used near the degreaser opening.

B. Solvent carry-out shall be minimized in the following ways:

(I) Parts shall be racked, if practical, to allow full drainage; and

(II) Vertical conveyor speed shall be maintained at less than eleven feet (11') per minute.

C. Whenever a conveyorized degreaser fails to perform within the operating parameters established for it by this rule, the unit shall be shut down immediately and shall remain shut down until trained service personnel are able to restore operation within the established parameters.

D. Solvent leaks shall be repaired immediately or the degreaser shall be shut down until the leaks are repaired.

E. Water shall not be visually detectable in solvent exiting the water separator.

F. Covers shall be placed over entrances and exits immediately after conveyor and exhaust are shut down and removed just before they are started up.

G. Waste solvent shall be stored in closed containers only.

H. Any waste material removed from a conveyorized degreaser shall be disposed of by one (1) of the following methods or equivalent and in accordance with the Missouri Hazardous Waste Management Commission rules codified at 10 CSR 10-25, as applicable:

(I) Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or

(II) Stored in closed containers for transfer to—

(a) A contract reclamation service; or

(b) A disposal facility approved by the director.

(D) Operator and Supervisor Training.

1. Only persons trained in at least the operational and equipment requirements specified in this rule for their particular solvent metal cleaning process shall be permitted to operate the equipment.

2. The supervisor of any person who operates a solvent metal cleaning process shall receive equal or greater operational training than the operator.

3. Refresher training shall be given to all solvent metal cleaning equipment operators at least once each twelve (12) months.

4. Training records shall be maintained per subsections (4)(D) and (4)(E) of this rule.

(4) Reporting and Record Keeping.

(A) The owner or operator of a solvent metal cleaning or degreasing operation shall keep monthly inventory records of solvent types and amounts purchased and solvent consumption. These records shall include all types and amounts of solvent containing waste material transferred to either a contract reclamation service or to a disposal facility and all amounts distilled on the premises. The records also shall include maintenance and repair logs for both the degreaser and any associated control equipment. The director may require additional record keeping if necessary to adequately demonstrate compliance with this rule.

(B) After August 30, 2002, all persons subject to the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I), and (3)(B)1.B.(III) of this rule shall maintain records which include for each purchase of cold cleaning solvent:

1. The name and address of the solvent supplier;

2. The date of purchase;

3. The type of solvent; and

4. The vapor pressure of the solvent in mmHg at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)).

(C) After August 30, 2002, all persons subject to the requirements of parts (3)(B)1.A.(II), (3)(B)1.A.(IV), (3)(B)1.B.(II),and (3)(B)1.B.(IV) of this rule shall maintain records which include for each sale of cold cleaning solvent:

1. The name and address of the solvent purchaser;

2. The date of sale;

3. The type of solvent;

4. The unit volume of solvent;

5. The total volume of solvent; and

6. The vapor pressure of the solvent measured in mmHg at twenty degrees Celsius (20/C) (sixty-eight degrees Fahrenheit (68/F)).

(D) A record shall be kept of solvent metal cleaning training for each employee.

(E) All records required under subsections (4)(A), (4)(B), (4)(C) and (4)(D) of this rule shall be retained for five (5) years and shall be made available to the director upon request.

(5) Test Methods. *(Not applicable)*

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)

FRM: 67 FR 20036 (04/24/2002)

PRM: 67 FR 20080 (04/24/2002)

State Submission: 10/19/2001

State Final: 10 C.S.R. 10-2 (09/30/2001)

APDB File: MO-178

Description: This revision only affects cold cleaning operations. This rule was amended by adding definitions, phasing-in the required use of solvents with a lower vapor pressure, equipment specifications, operating procedures and operator and supervisor training.

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CFR: 40 C.F.R. 52.1320(c)(79)(i)(B)

FRM: 59 FR 43480 (8/24/94), Correction notice 60 FR 16806 (4/3/95)

PRM: 57 FR 32191 (7/21/92)

State Submission: 11/20/91

State Proposal: 16 MR 989 (7/1/91)

State Final: 10 C.S.R. 10-2 (11/29/91)

APDB File: MO-100

Description: This revision updates this rule to include the correct reference method specified in 10 C.S.R. 10-6.030.

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CFR: 40 C.F.R. 52.1320(c)(65)(i)(F)

FRM: 54 FR 10322 (3/13/89)

PRM: 53 FR 24735 (6/30/88)

State Submission: 12/18/87

State Proposal: 12 MR 990 (7/13/87)

State Final: 12 MR 1771 (12/2/87)

APDB File: MO-49

Description: The EPA approved changes which: (1) deleted the 100 TPY applicability cutoff, (2) added recordkeeping provisions, and (3) improved clarity and enforceability. (Note: the 100 TPY cutoff had not been previously submitted by the state and approved by the EPA.)

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CFR: 40 C.F.R. 52.1320(c)(16)(i)

FRM: 45 FR 24140 (4/9/80) and 45 FR 46806 (7/11/80) (correction)

PRM: 44 FR 61384 (10/25/79)

State Submission: 6/29/79

State Proposal: 3 MR 939 (12/1/78)

State Final: 4 MR 488 (6/1/79)

APDB File: MO-01

Description: The EPA approved a new regulation to control VOC from solvent metal cleaning or degreasing operations. The rule established equipment specifications and operating procedures for cold cleaners, open-top vapor degreasers, and conveyorized degreasers.

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Difference Between the State and EPA-Approved Regulation

None.